Automated Junos show commands collection

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SALT PROXY for JUNOS

- For help about Junos automation with SaltStack, you can visit this repository https://github.com/ksator/junos-automation-with-saltstack

- SaltStack supports Junos automation with a Salt proxy
  - Proxy controls junos devices without installing salt on device.
  - It uses ZMQ between the Salt master and the proxy
  - It uses NETCONF between the Junos device

- It provides execution modules for Junos so you can run commands on various machines in parallel with a flexible targeting system
  - https://docs.saltstack.com/en/latest/ref/modules/all/salt.modules.junos.html

- It provides state modules for Junos so you can apply sls files
  - https://docs.saltstack.com/en/latest/ref/states/all/salt.states.junos.html

- Junos facts are stored in salt grains

JUNOS SYSLOG SALT ENGINE

- Listens to syslog events
- Extracts events information
- Sends information on the event bus.
- Control the type of events to be sent.
- Salt reactors has the ability to take actions according to these events (event driven automation).

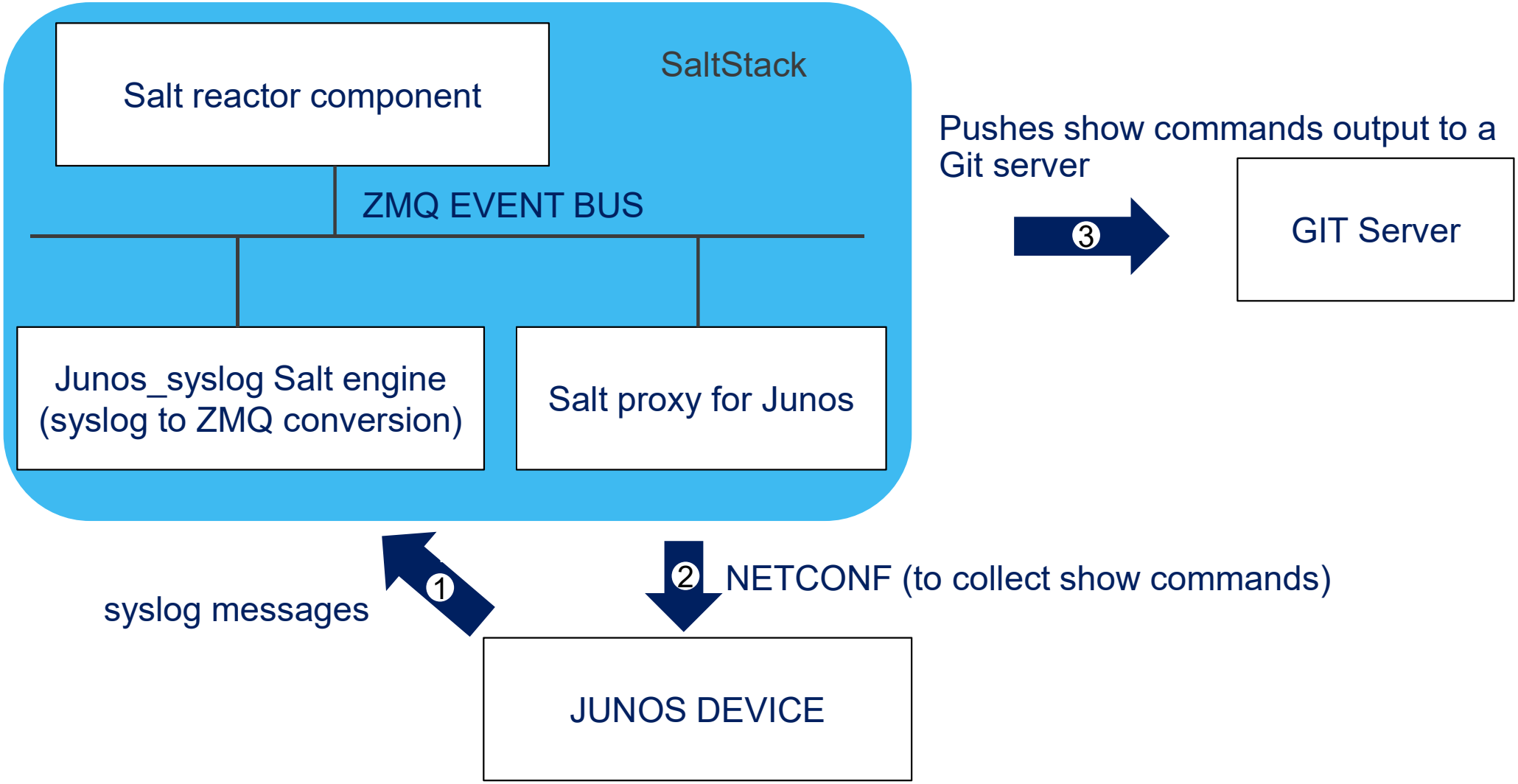
- Junos_syslog engine configuration

```
root@server:~# more /etc/salt/master
...
engines:
  - junos_syslog:
      port: 516
...
```

OVERVIEW OF THE DEMO

- Based on junos syslog messages, SaltStack automatically collects show commands from the network device that send the syslog message and archive the data collected to a git server

- Code of the demo is available here https://github.com/ksator/automated_junos_show_commands_collection_with_syslog_saltstack



SALTSTACK REACTOR CONFIGURATION

```
root@server:~# salt-run reactor.list
....
|_
  ----------
  jnpr/syslog/*/SNMP_TRAP_LINK_*:
      - /srv/reactor/automate_show_commands.sls
```

This 0MQ topic is pub by junos_syslog salt engine

This reactor file collects junos show commands on the device that send the syslog messages, and pushes the output to a git server

JUNOS SYSLOG CONFIGURATION

- For junos_syslog engine to receive events, syslog must be set on the junos device:
  - The ip address is the one of the server running the syslog engine
  - The port is the port where the engine is listening for events.

```
jcluser@vMX-1> show configuration system syslog host 100.123.35.1
any any;
match SNMP_TRAP_LINK;
port 516;
```

EVENT DRIVEN AUTOMATION

- The junos device sends a SNMP_TRAP_LINK_DOWN syslog message to SaltStack
  - The SaltStack junos_syslog engine publishes a 0MQ message
- The reactor component of the master is subscribing to this 0MQ topic
  - So it executes the /srv/reactor/automate_show_commands.sls file
    - This will make the proxy that manages the junos device that sent the syslog message to collects show commands, and to push the data collected to a git repository

JUNOS AUTOMATION RESOURCES

If you are looking for more details about Junos automation, you can visit these repositories
https://github.com/ksator?tab=repositories
https://gitlab.com/users/ksator/projects
https://gist.github.com/ksator/


Thank you